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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/698,662 | 10/31/2003 | Naoyuki Enjoji | TOW-048 | 3750 |
| 959 | 7590 | 02/14/2006 | EXAMINER | |
| LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109 | | | RUTHKOSKY, MARK | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1745 | |
| DATE MAILED: 02/14/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,662

Applicant(s)

ENJOJI ET AL.

Examiner

Mark Ruthkosky

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/31/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement filed 10/31/2003 has been placed in the application file, and the information referred to therein has been considered as to the merits.

Drawings

The drawings filed on 10/31/2003 have been approved.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 defines the metal member to be a cladding member and that the metal member is gold plated. As defined in claim 1, the metal member is a layer on the resin member. In claim 2, two metal members are claimed, but they don't appear to be different from one

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another as defined in the instant specification. Thus, the location of the metal member is indefinite. It appears as if there are two metal members.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elhamid et al. (US 6,887,610.)

The instant claims are to a fuel cell comprising an electrolyte electrode assembly including an anode, a cathode, and an electrolyte interposed between said anode and said cathode; and a resinous passage member and a metal member combined together such that said metal member covers said resinous passage member, wherein a coolant flow field electrically insulated from said electrolyte electrode assembly is defined by said resinous passage member; a coolant is supplied to said coolant flow field for cooling said electrolyte electrode assembly; and electric energy generated in said electrolyte electrode assembly is serially transmitted through a surface of said metal member around said resinous passage member, and collected from said electrolyte electrode assembly.

Elhamid et al. (US 6,887,610) teaches a fuel cell comprising an electrolyte electrode assembly including an anode, a cathode, and an electrolyte interposed between said anode and said cathode. A separator passage member and a metal member are combined together such that

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said metal member covers said separator passage member. A coolant is supplied to said coolant flow field for cooling said electrolyte electrode assembly; and electric energy generated in said electrolyte electrode assembly is serially transmitted through a surface of said metal member around, and collected from said electrolyte electrode assembly (claims 1-9 and figures 4-5.) The separator includes two plates combined to give a coolant flow channel. The flow channel is coated with gold or silver. The separator plates may be stainless steel, graphite, or any metal or non-metal that is capable of being plated with a metallic plating material (col. 6, lines 20-40.) Sealant materials are formed on the plate (reference # 38) from a resin member (figures 4-5.) Stainless steel/gold claddings are taught in Table 1.

The Elhamid et al. (US 6,887,610) reference does not teach the coolant flow field electrically is insulated from said electrolyte electrode assembly by a resinous passage member. Mund et al. (US 6,306,533) teaches a fuel cell cooling system wherein the separator plates that form the cooling cards may be made of stainless steel, copper, bronze or metal containing polymers. The coolant plate may be treated with gold. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an electrically insulating polymer as taught in the Mund et al. (US 6,306,533) fuel cell separator plate into the separator plate of Elhamid et al. (US 6,887,610) as the coated polymer will provide protection against corrosion as taught in Mund. The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

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Claims 4-5 include allowable subject matter as the metal member includes a copper member and a foamed metal member impregnated with a resin. The prior art, as cited, ^{does} ~~des~~ not teach a metal member of these materials. Claim 6 is allowed, as the prior art does not teach a metal member formed of stainless steel and copper and the coolant flow field is electrically insulated by the resin passage member.



Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky

Primary Patent Examiner

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2/6/08